



## SEQUENCE LISTING

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<110> Lawn, Richard M.  
Wade, David  
Garvin, Michael

<120> Compositions and Methods for Increasing Cholesterol  
Efflux and Raising HDL using ATP Binding Cassette  
Transporter Protein ABC1

<130> 99,395-B

<140> 09/596,141

<141> 2000-06-16

<150> US 60/140,264

<151> 1999-06-18

<150> US 60/153,872

<151> 1999-09-14

<150> US 60/166,573

<151> 1999-11-19

<160> 57

<170> PatentIn Ver. 2.0

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Asp Asn Val Glu Arg Thr Asn Lys Ile Lys Asp Gly Tyr Trp Asp Pro		
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Gly Pro Arg Ala Asp Pro Phe Glu Asp Met Arg Tyr Val Trp Gly Gly		
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Phe Ala Tyr Leu Gln Asp Val Val Glu Gln Ala Ile Ile Arg Val Leu		
595	600	605
Thr Gly Thr Glu Lys Lys Thr Gly Val Tyr Met Gln Gln Met Pro Tyr		

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Pro Cys Tyr Val Asp Asp Ile Phe Leu Arg Val Met Ser Arg Ser Met		
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Pro Leu Phe Met Thr Leu Ala Trp Ile Tyr Ser Val Ala Val Ile Ile		
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Lys Gly Ile Val Tyr Glu Lys Glu Ala Arg Leu Lys Glu Thr Met Arg		
	660	665 670
Ile Met Gly Leu Asp Asn Ser Ile Leu Trp Phe Ser Trp Phe Ile Ser		
	675	680 685
Ser Leu Ile Pro Leu Leu Val Ser Ala Gly Leu Leu Val Val Ile Leu		
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Lys Leu Gly Asn Leu Leu Pro Tyr Ser Asp Pro Ser Val Val Phe Val		
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Phe Leu Ser Val Phe Ala Val Val Thr Ile Leu Gln Cys Phe Leu Ile		
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Ser Thr Leu Phe Ser Arg Ala Asn Leu Ala Ala Ala Cys Gly Gly Ile		
	740	745 750
Ile Tyr Phe Thr Leu Tyr Leu Pro Tyr Val Leu Cys Val Ala Trp Gln		
	755	760 765
Asp Tyr Val Gly Phe Thr Leu Lys Ile Phe Ala Ser Leu Leu Ser Pro		
	770	775 780
Val Ala Phe Gly Phe Gly Cys Glu Tyr Phe Ala Leu Phe Glu Glu Gln		
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Asp Gly Phe Asn Leu Thr Thr Ser Ile Ser Met Met Leu Phe Asp Thr		
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Phe Leu Tyr Gly Val Met Thr Trp Tyr Ile Glu Ala Val Phe Pro Gly		
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Gln Tyr Gly Ile Pro Arg Pro Trp Tyr Phe Pro Cys Thr Lys Ser Tyr		
850	855	860
Trp Phe Gly Glu Glu Ser Asp Glu Lys Ser His Pro Gly Ser Asn Gln		



865	870	875	880
Lys Arg Met Ser Glu Ile Cys Met Glu Glu Glu Pro Thr His Leu Lys			
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Leu Gly Val Ser Ile Gln Asn Leu Val Lys Val Tyr Arg Asp Gly Met			
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Lys Val Ala Val Asp Gly Leu Ala Leu Asn Phe Tyr Glu Gly Gln Ile			
	915	920	925
Thr Ser Phe Leu Gly His Asn Gly Ala Gly Lys Thr Thr Thr Met Ser			
	930	935	940
Ile Leu Thr Gly Leu Phe Pro Pro Thr Ser Gly Thr Ala Tyr Ile Leu			
	945	950	955
Gly Lys Asp Ile Arg Ser Glu Met Ser Thr Ile Arg Gln Asn Leu Gly			
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Val Cys Pro Gln His Asn Val Leu Phe Asp Met Leu Thr Val Glu Glu			
	980	985	990
His Ile Trp Phe Tyr Ala Arg Leu Lys Gly Leu Ser Glu Lys His Val			
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Lys Ala Glu Met Glu Gln Met Ala Leu Asp Val Gly Leu Pro Ser Ser			
	1010	1015	1020
Lys Leu Lys Ser Lys Thr Ser Gln Leu Ser Gly Gly Met Gln Arg Lys			
	1025	1030	1035
Leu Ser Val Ala Leu Ala Phe Val Gly Gly Ser Lys Val Val Ile Leu			
	1045	1050	1055
Asp Glu Pro Thr Ala Gly Val Asp Pro Tyr Ser Arg Arg Gly Ile Trp			
	1060	1065	1070
Glu Leu Leu Leu Lys Tyr Arg Gln Gly Arg Thr Ile Ile Leu Ser Thr			
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His His Met Asp Glu Ala Asp Val Leu Gly Asp Arg Ile Ala Ile Ile			
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Ser His Gly Lys Leu Cys Cys Val Gly Ser Ser Leu Phe Leu Lys Asn			
	1105	1110	1115
Gln Leu Gly Thr Gly Tyr Tyr Leu Thr Leu Val Lys Lys Asp Val Glu			

1125	1130	1135
Ser Ser Leu Ser Ser Cys Arg Asn Ser Ser Ser Thr Val Ser Tyr Leu		
1140	1145	1150
Lys Lys Glu Asp Ser Val Ser Gln Ser Ser Ser Asp Ala Gly Leu Gly		
1155	1160	1165
Ser Asp His Glu Ser Asp Thr Leu Thr Ile Asp Val Ser Ala Ile Ser		
1170	1175	1180
Asn Leu Ile Arg Lys His Val Ser Glu Ala Arg Leu Val Glu Asp Ile		
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Gly His Glu Leu Thr Tyr Val Leu Pro Tyr Glu Ala Ala Lys Glu Gly		
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Ala Phe Val Glu Leu Phe His Glu Ile Asp Asp Arg Leu Ser Asp Leu		
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Gly Ile Ser Ser Tyr Gly Ile Ser Glu Thr Thr Leu Glu Glu Ile Phe		
1235	1240	1245
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Thr Leu Pro Ala Arg Arg Asn Arg Arg Ala Phe Gly Asp Lys Gln Ser		
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Cys Leu Arg Pro Phe Thr Glu Asp Asp Ala Ala Asp Pro Asn Asp Ser		
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Asp Ile Asp Pro Glu Ser Arg Glu Thr Asp Leu Leu Ser Gly Met Asp		
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Gly Lys Gly Ser Tyr Gln Val Lys Gly Trp Lys Leu Thr Gln Gln Gln		
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Phe Val Ala Leu Leu Trp Lys Arg Leu Leu Ile Ala Arg Arg Ser Arg		
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Lys Gly Phe Phe Ala Gln Ile Val Leu Pro Ala Val Phe Val Cys Ile		
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Ala Leu Val Phe Ser Leu Ile Val Pro Pro Phe Gly Lys Tyr Pro Ser		
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Leu Glu Leu Gln Pro Trp Met Tyr Asn Glu Gln Tyr Thr Phe Val Ser		

1380	1385	1390
Asn Asp Ala Pro Glu Asp Thr Gly Thr Leu Glu Leu Leu Asn Ala Leu		
1395	1400	1405
Thr Lys Asp Pro Gly Phe Gly Thr Arg Cys Met Glu Gly Asn Pro Ile		
1410	1415	1420
Pro Asp Thr Pro Cys Gln Ala Gly Glu Glu Glu Trp Thr Thr Ala Pro		
1425	1430	1435 1440
Val Pro Gln Thr Ile Met Asp Leu Phe Gln Asn Gly Asn Trp Thr Met		
1445	1450	1455
Gln Asn Pro Ser Pro Ala Cys Gln Cys Ser Ser Asp Lys Ile Lys Lys		
1460	1465	1470
Met Leu Pro Val Cys Pro Pro Gly Ala Gly Gly Leu Pro Pro Pro Gln		
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Arg Lys Gln Asn Thr Ala Asp Ile Leu Gln Asp Leu Thr Gly Arg Asn		
1490	1495	1500
Ile Ser Asp Tyr Leu Val Lys Thr Tyr Val Gln Ile Ile Ala Lys Ser		
1505	1510	1515 1520
Leu Lys Asn Lys Ile Trp Val Asn Glu Phe Arg Tyr Gly Gly Phe Ser		
1525	1530	1535
Leu Gly Val Ser Asn Thr Gln Ala Leu Pro Pro Ser Gln Glu Val Asn		
1540	1545	1550
Asp Ala Ile Lys Gln Met Lys Lys His Leu Lys Leu Ala Lys Asp Ser		
1555	1560	1565
Ser Ala Asp Arg Phe Leu Asn Ser Leu Gly Arg Phe Met Thr Gly Leu		
1570	1575	1580
Asp Thr Arg Asn Asn Val Lys Val Trp Phe Asn Asn Lys Gly Trp His		
1585	1590	1595 1600
Ala Ile Ser Ser Phe Leu Asn Val Ile Asn Asn Ala Ile Leu Arg Ala		
1605	1610	1615
Asn Leu Gln Lys Gly Glu Asn Pro Ser His Tyr Gly Ile Thr Ala Phe		
1620	1625	1630
Asn His Pro Leu Asn Leu Thr Lys Gln Gln Leu Ser Glu Val Ala Leu		

1635	1640	1645
Met Thr Thr Ser Val Asp Val Leu Val Ser Ile Cys Val Ile Phe Ala		
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Met Ser Phe Val Pro Ala Ser Phe Val Val Phe Leu Ile Gln Glu Arg		
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Val Ser Lys Ala Lys His Leu Gln Phe Ile Ser Gly Val Lys Pro Val		
1685	1690	1695
Ile Tyr Trp Leu Ser Asn Phe Val Trp Asp Met Cys Asn Tyr Val Val		
1700	1705	1710
Pro Ala Thr Leu Val Ile Ile Ile Phe Ile Cys Phe Gln Gln Lys Ser		
1715	1720	1725
Tyr Val Ser Ser Thr Asn Leu Pro Val Leu Ala Leu Leu Leu Leu Leu		
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Tyr Gly Trp Ser Ile Thr Pro Leu Met Tyr Pro Ala Ser Phe Val Phe		
1745	1750	1755 1760
Lys Ile Pro Ser Thr Ala Tyr Val Val Leu Thr Ser Val Asn Leu Phe		
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Ile Gly Ile Asn Gly Ser Val Ala Thr Phe Val Leu Glu Leu Phe Thr		
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Asp Asn Lys Leu Asn Asn Ile Asn Asp Ile Leu Lys Ser Val Phe Leu		
1795	1800	1805
Ile Phe Pro His Phe Cys Leu Gly Arg Gly Leu Ile Asp Met Val Lys		
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Asn Gln Ala Met Ala Asp Ala Leu Glu Arg Phe Gly Glu Asn Arg Phe		
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Val Ser Pro Leu Ser Trp Asp Leu Val Gly Arg Asn Leu Phe Ala Met		
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Ala Val Glu Gly Val Val Phe Phe Leu Ile Thr Val Leu Ile Gln Tyr		
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Asn Asp Glu Asp Glu Asp Val Arg Arg Glu Arg Gln Arg Ile Leu Asp		

1890	1895	1900
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Tyr Arg Arg Lys Arg Lys Pro Ala Val Asp Arg Ile Cys Val Gly Ile 1925	1930	1935
Pro Pro Gly Glu Cys Phe Gly Leu Leu Gly Val Asn Gly Ala Gly Lys 1940	1945	1950
Ser Ser Thr Phe Lys Met Leu Thr Gly Asp Thr Thr Val Thr Arg Gly 1955	1960	1965
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His Gln Asn Met Gly Tyr Cys Pro Gln Phe Asp Ala Ile Thr Glu Leu 1985	1990	1995 2000
Leu Thr Gly Arg Glu His Val Glu Phe Phe Ala Leu Leu Arg Gly Val 2005	2010	2015
Pro Glu Lys Glu Val Gly Lys Val Gly Glu Trp Ala Ile Arg Lys Leu 2020	2025	2030
Gly Leu Val Lys Tyr Gly Glu Lys Tyr Ala Gly Asn Tyr Ser Gly Gly 2035	2040	2045
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Val Val Phe Leu Asp Glu Pro Thr Thr Gly Met Asp Pro Lys Ala Arg 2065	2070	2075 2080
Arg Phe Leu Trp Asn Cys Ala Leu Ser Val Val Lys Glu Gly Arg Ser 2085	2090	2095
Val Val Leu Thr Ser His Ser Met Glu Glu Cys Glu Ala Leu Cys Thr 2100	2105	2110
Arg Met Ala Ile Met Val Asn Gly Arg Phe Arg Cys Leu Gly Ser Val 2115	2120	2125
Gln His Leu Lys Asn Arg Phe Gly Asp Gly Tyr Thr Ile Val Val Arg 2130	2135	2140
Ile Ala Gly Ser Asn Pro Asp Leu Lys Pro Val Gln Asp Phe Phe Gly		

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 Gln Tyr Gln Leu Pro Ser Ser Leu Ser Ser Leu Ala Arg Ile Phe Ser  
                          2180                      2185                      2190  
 Ile Leu Ser Gln Ser Lys Lys Arg Leu His Ile Glu Asp Tyr Ser Val  
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 Ser Asp Asp Asp His Leu Lys Asp Leu Ser Leu His Lys Asn Gln Thr  
 2225                      2230                      2235                      2240  
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 Lys Glu Ser Tyr Val  
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<211> 748

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (1) .. (748)

<223> All n's are unknown.

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<210> 5

<211> 2011

<212> DNA

<213> Homo sapiens

<400> 5

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<210> 6

<211> 3366

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (1)..(3366)

<223> All n's are unknown.

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Val	Ile	Leu	His	Lys	Val	Phe	Leu	Gln	Gly	Tyr	Gln	Leu	His	Leu	Thr
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Ser	Leu	Cys	Asn	Gly	Ser	Lys	Ser	Glu	Glu	Met	Ile	Gln	Leu	Gly	Asp
		195					200					205			
Gln	Glu	Val	Ser	Glu	Leu	Cys	Gly	Leu	Pro	Lys	Glu	Lys	Leu	Ala	Ala
	210					215					220				
Ala	Glu	Arg	Val	Leu	Arg	Ser	Asn	Met	Asp	Ile	Leu	Lys	Pro	Ile	Leu
225					230					235					240

Arg	Thr	Leu	Asn	Ser	Thr	Ser	Pro	Phe	Pro	Ser	Lys	Glu	Leu	Ala	Glu	245	250	255
Ala	Thr	Lys	Thr	Leu	Leu	His	Ser	Leu	Gly	Thr	Leu	Ala	Gln	Glu	Leu	260	265	270
Phe	Ser	Met	Arg	Ser	Trp	Ser	Asp	Met	Arg	Gln	Glu	Val	Met	Phe	Leu	275	280	285
Thr	Asn	Val	Asn	Ser	Ser	Ser	Ser	Ser	Thr	Gln	Ile	Tyr	Gln	Ala	Val	290	295	300
Ser	Arg	Ile	Val	Cys	Gly	His	Pro	Glu	Gly	Gly	Gly	Leu	Lys	Ile	Lys	305	310	315 320
Ser	Leu	Asn	Trp	Tyr	Glu	Asp	Asn	Asn	Tyr	Lys	Ala	Leu	Phe	Gly	Gly	325	330	335
Asn	Gly	Thr	Glu	Glu	Asp	Ala	Glu	Thr	Phe	Tyr	Asp	Asn	Ser	Thr	Thr	340	345	350
Pro	Tyr	Cys	Asn	Asp	Leu	Met	Lys	Asn	Leu	Glu	Ser	Ser	Pro	Leu	Ser	355	360	365
Arg	Ile	Ile	Trp	Lys	Ala	Leu	Lys	Pro	Leu	Leu	Val	Gly	Lys	Ile	Leu	370	375	380
Tyr	Thr	Pro	Asp	Thr	Pro	Ala	Thr	Arg	Gln	Val	Met	Ala	Glu	Val	Asn	385	390	395 400
Lys	Thr	Phe	Gln	Glu	Leu	Ala	Val	Phe	His	Asp	Leu	Glu	Gly	Met	Trp	405	410	415
Glu	Glu	Leu	Ser	Pro	Lys	Ile	Trp	Thr	Phe	Met	Glu	Asn	Ser	Gln	Glu	420	425	430
Met	Asp	Leu	Val	Arg	Met	Leu	Leu	Asp	Ser	Arg	Asp	Asn	Asp	His	Phe	435	440	445
Trp	Glu	Gln	Gln	Leu	Asp	Gly	Leu	Asp	Trp	Thr	Ala	Gln	Asp	Ile	Val	450	455	460
Ala	Phe	Leu	Ala	Lys	His	Pro	Glu	Asp	Val	Gln	Ser	Ser	Asn	Gly	Ser	465	470	475 480
Val	Tyr	Thr	Trp	Arg	Glu	Ala	Phe	Asn	Glu	Thr	Asn	Gln	Ala	Ile	Arg	485	490	495

Thr	Ile	Ser	Arg	Phe	Met	Glu	Cys	Val	Asn	Leu	Asn	Lys	Leu	Glu	Pro			
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Ile	Ala	Thr	Glu	Val	Trp	Leu	Ile	Asn	Lys	Ser	Met	Glu	Leu	Leu	Asp			
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Glu	Arg	Lys	Phe	Trp	Ala	Gly	Ile	Val	Phe	Thr	Gly	Ile	Thr	Pro	Gly			
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Ser	Ile	Glu	Leu	Pro	His	His	Val	Lys	Tyr	Lys	Ile	Arg	Met	Asp	Ile			
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Asp	Asn	Val	Glu	Arg	Thr	Asn	Lys	Ile	Lys	Asp	Gly	Tyr	Trp	Asp	Pro			
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Gly	Pro	Arg	Ala	Asp	Pro	Phe	Glu	Asp	Met	Arg	Tyr	Val	Trp	Gly	Gly			
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Phe	Ala	Tyr	Leu	Arg	Asp	Val	Val	Glu	Gln	Ala	Ile	Ile	Arg	Val	Leu			
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Thr	Gly	Thr	Glu	Lys	Lys	Thr	Gly	Val	Tyr	Met	Gln	Gln	Met	Pro	Tyr			
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Pro	Cys	Tyr	Val	Asp	Asp	Ile	Phe	Leu	Arg	Val	Met	Ser	Arg	Ser	Met			
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Pro	Leu	Phe	Met	Thr	Leu	Ala	Trp	Ile	Tyr	Ser	Val	Ala	Val	Ile	Ile			
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Lys	Gly	Ile	Val	Tyr	Glu	Lys	Glu	Ala	Arg	Leu	Lys	Glu	Thr	Met	Arg			
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Ile	Met	Gly	Leu	Asp	Asn	Ser	Ile	Leu	Trp	Phe	Ser	Trp	Phe	Ile	Ser			
			675				680					685						
Ser	Leu	Ile	Pro	Leu	Leu	Val	Ser	Ala	Gly	Leu	Leu	Val	Val	Ile	Leu			
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Lys	Leu	Gly	Asn	Leu	Leu	Pro	Tyr	Ser	Asp	Pro	Ser	Val	Val	Phe	Val			
705					710					715					720			
Phe	Leu	Ser	Val	Phe	Ala	Val	Val	Thr	Ile	Leu	Gln	Cys	Phe	Leu	Ile			
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Ser	Thr	Leu	Phe	Ser	Arg	Ala	Asn	Leu	Ala	Ala	Ala	Cys	Gly	Gly	Ile			
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Ile	Tyr	Phe	Thr	Leu	Tyr	Leu	Pro	Tyr	Val	Leu	Cys	Val	Ala	Trp	Gln	755	760	765
Asp	Tyr	Val	Gly	Phe	Thr	Leu	Lys	Ile	Phe	Ala	Ser	Leu	Leu	Ser	Pro	770	775	780
Val	Ala	Phe	Gly	Phe	Gly	Cys	Glu	Tyr	Phe	Ala	Leu	Phe	Glu	Glu	Gln	785	790	795
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Phe	Leu	Tyr	Gly	Val	Met	Thr	Trp	Tyr	Ile	Glu	Ala	Val	Phe	Pro	Gly	835	840	845
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Lys	Arg	Met	Ser	Glu	Ile	Cys	Met	Glu	Glu	Glu	Pro	Thr	His	Leu	Lys	885	890	895
Leu	Gly	Val	Ser	Ile	Gln	Asn	Leu	Val	Lys	Val	Tyr	Arg	Asp	Gly	Met	900	905	910
Lys	Val	Ala	Val	Asp	Gly	Leu	Ala	Leu	Asn	Phe	Tyr	Glu	Gly	Gln	Ile	915	920	925
Thr	Ser	Phe	Leu	Gly	His	Asn	Gly	Ala	Gly	Lys	Thr	Thr	Thr	Met	Ser	930	935	940
Ile	Leu	Thr	Gly	Leu	Phe	Pro	Pro	Thr	Ser	Gly	Thr	Ala	Tyr	Ile	Leu	945	950	955
Gly	Lys	Asp	Ile	Arg	Ser	Glu	Met	Ser	Thr	Ile	Arg	Gln	Asn	Leu	Gly	965	970	975
Val	Cys	Pro	Gln	His	Asn	Val	Leu	Phe	Asp	Met	Leu	Thr	Val	Glu	Glu	980	985	990
His	Ile	Trp	Phe	Tyr	Ala	Arg	Leu	Lys	Gly	Leu	Ser	Glu	Lys	His	Val	995	1000	1005

Lys Ala Glu Met Glu Gln Met Ala Leu Asp Val Gly Leu Pro Ser Ser  
 1010 1015 1020

Lys Leu Lys Ser Lys Thr Ser Gln Leu Ser Gly Gly Met Gln Arg Lys  
 1025 1030 1035 1040

Leu Ser Val Ala Leu Ala Phe Val Gly Gly Ser Lys Val Val Ile Leu  
 1045 1050 1055

Asp Glu Pro Thr Ala Gly Val Asp Pro Tyr Ser Arg Arg Gly Ile Trp  
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Glu Leu Leu Leu Lys Tyr Arg Gln Gly Arg Thr Ile Ile Leu Ser Thr  
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His His Met Asp Glu Ala Asp Val Leu Gly Asp Arg Ile Ala Ile Ile  
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Ser His Gly Lys Leu Cys Cys Val Gly Ser Ser Leu Phe Leu Lys Asn  
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Gln Leu Gly Thr Gly Tyr Tyr Leu Thr Leu Val Lys Lys Asp Val Glu  
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Ser Ser Leu Ser Ser Cys Arg Asn Ser Ser Ser Thr Val Ser Tyr Leu  
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Lys Lys Glu Asp Ser Val Ser Gln Ser Ser Ser Asp Ala Gly Leu Gly  
 1155 1160 1165

Ser Asp His Glu Ser Asp Thr Leu Thr Ile Asp Val Ser Ala Ile Ser  
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Asn Leu Ile Arg Lys His Val Ser Glu Ala Arg Leu Val Glu Asp Ile  
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Gly His Glu Leu Thr Tyr Val Leu Pro Tyr Glu Ala Ala Lys Glu Gly  
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Ala Phe Val Glu Leu Phe His Glu Ile Asp Asp Arg Leu Ser Asp Leu  
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Gly Ile Ser Ser Tyr Gly Ile Ser Glu Thr Thr Leu Glu Glu Ile Phe  
 1235 1240 1245

Leu Lys Val Ala Glu Glu Ser Gly Val Asp Ala Glu Thr Ser Asp Gly  
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Phe	Val	Ala	Leu	Leu	Trp	Lys	Arg	Leu	Leu	Ile	Ala	Arg	Arg	Ser	Arg
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Ala	Leu	Val	Phe	Ser	Leu	Ile	Val	Pro	Pro	Phe	Gly	Lys	Tyr	Pro	Ser
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Leu	Glu	Leu	Gln	Pro	Trp	Met	Tyr	Asn	Glu	Gln	Tyr	Thr	Phe	Val	Ser
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Thr	Lys	Asp	Pro	Gly	Phe	Gly	Thr	Arg	Cys	Met	Glu	Gly	Asn	Pro	Ile
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Pro	Asp	Thr	Pro	Cys	Gln	Ala	Gly	Glu	Glu	Glu	Trp	Thr	Thr	Ala	Pro
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Val	Pro	Gln	Thr	Ile	Met	Asp	Leu	Phe	Gln	Asn	Gly	Asn	Trp	Thr	Met
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Gln	Asn	Pro	Ser	Pro	Ala	Cys	Gln	Cys	Ser	Ser	Asp	Lys	Ile	Lys	Lys
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Met	Leu	Pro	Val	Cys	Pro	Pro	Gly	Ala	Gly	Gly	Leu	Pro	Pro	Pro	Gln
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Arg	Lys	Gln	Asn	Thr	Ala	Asp	Ile	Leu	Gln	Asp	Leu	Thr	Gly	Arg	Asn
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Ile	Ser	Asp	Tyr	Leu	Val	Lys	Thr	Tyr	Val	Gln	Ile	Ile	Ala	Lys	Ser
1505								1510						1515	1520

Leu Lys Asn Lys Ile Trp Val Asn Glu Phe Arg Tyr Gly Gly Phe Ser	1525	1530	1535
Leu Gly Val Ser Asn Thr Gln Ala Leu Pro Pro Ser Gln Glu Val Asn	1540	1545	1550
Asp Ala Ile Lys Gln Met Lys Lys His Leu Lys Leu Ala Lys Asp Ser	1555	1560	1565
Ser Ala Asp Arg Phe Leu Asn Ser Leu Gly Arg Phe Met Thr Gly Leu	1570	1575	1580
Asp Thr Arg Asn Asn Val Lys Val Trp Phe Asn Asn Lys Gly Trp His	1585	1590	1595
Ala Ile Ser Ser Phe Leu Asn Val Ile Asn Asn Ala Ile Leu Arg Ala	1605	1610	1615
Asn Leu Gln Lys Gly Glu Asn Pro Ser His Tyr Gly Ile Thr Ala Phe	1620	1625	1630
Asn His Pro Leu Asn Leu Thr Lys Gln Gln Leu Ser Glu Val Ala Leu	1635	1640	1645
Met Thr Thr Ser Val Asp Val Leu Val Ser Ile Cys Val Ile Phe Ala	1650	1655	1660
Met Ser Phe Val Pro Ala Ser Phe Val Val Phe Leu Ile Gln Glu Arg	1665	1670	1675
Val Ser Lys Ala Lys His Leu Gln Phe Ile Ser Gly Val Lys Pro Val	1685	1690	1695
Ile Tyr Trp Leu Ser Asn Phe Val Trp Asp Met Cys Asn Tyr Val Val	1700	1705	1710
Pro Ala Thr Leu Val Ile Ile Ile Phe Ile Cys Phe Gln Gln Lys Ser	1715	1720	1725
Tyr Val Ser Ser Thr Asn Leu Pro Val Leu Ala Leu Leu Leu Leu	1730	1735	1740
Tyr Gly Trp Ser Ile Thr Pro Leu Met Tyr Pro Ala Ser Phe Val Phe	1745	1750	1755
Lys Ile Pro Ser Thr Ala Tyr Val Val Leu Thr Ser Val Asn Leu Phe	1765	1770	1775

Ile Gly	Ile Asn Gly Ser Val	Ala Thr Phe Val	Leu Glu Leu Phe Thr
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1940	1945	1950	
Ser Ser Thr Phe Lys Met Leu Thr Gly Asp Thr Thr Val Thr Arg Gly			
1955	1960	1965	
Asp Ala Phe Leu Asn Lys Asn Ser Ile Leu Ser Asn Ile His Glu Val			
1970	1975	1980	
His Gln Asn Met Gly Tyr Cys Pro Gln Phe Asp Ala Ile Thr Glu Leu			
1985	1990	1995	2000
Leu Thr Gly Arg Glu His Val Glu Phe Phe Ala Leu Leu Arg Gly Val			
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Pro Glu Lys Glu Val Gly Lys Val Gly Glu Trp Ala Ile Arg Lys Leu			
2020	2025	2030	

Gly Leu Val Lys Tyr Gly Glu Lys Tyr Ala Gly Asn Tyr Ser Gly Gly  
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Asn Lys Arg Lys Leu Ser Thr Ala Met Ala Leu Ile Gly Gly Pro Pro  
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Val Val Phe Leu Asp Glu Pro Thr Thr Gly Met Asp Pro Lys Ala Arg  
2065 2070 2075 2080

Arg Phe Leu Trp Asn Cys Ala Leu Ser Val Val Lys Glu Gly Arg Ser  
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Val Val Leu Thr Ser His Ser Met Glu Glu Cys Glu Ala Leu Cys Thr  
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Gln His Leu Lys Asn Arg Phe Gly Asp Gly Tyr Thr Ile Val Val Arg  
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Ile Ala Gly Ser Asn Pro Asp Leu Lys Pro Val Gln Asp Phe Phe Gly  
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Leu Ala Phe Pro Gly Ser Val Leu Lys Glu Lys His Arg Asn Met Leu  
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Gln Tyr Gln Leu Pro Ser Ser Leu Ser Ser Leu Ala Arg Ile Phe Ser  
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Ile Leu Ser Gln Ser Lys Lys Arg Leu His Ile Glu Asp Tyr Ser Val  
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Ser Gln Thr Thr Leu Asp Gln Val Phe Val Asn Phe Ala Lys Asp Gln  
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Ser Asp Asp Asp His Leu Lys Asp Leu Ser Leu His Lys Asn Gln Thr  
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Lys Glu Ser Tyr Val  
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<211> 2261

<212> PRT

<213> Homo sapiens

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Leu Phe Ile Phe Leu Ile Leu Ile Ser Val Arg Leu Ser Tyr Pro Pro	35	40	45
Tyr Glu Gln His Glu Cys His Phe Pro Asn Lys Ala Met Pro Ser Ala	50	55	60
Gly Thr Leu Pro Trp Val Gln Gly Ile Ile Cys Asn Ala Asn Asn Pro	65	70	75
Cys Phe Arg Tyr Pro Thr Pro Gly Glu Ala Pro Gly Val Val Gly Asn	85	90	95
Phe Asn Lys Ser Ile Val Ala Arg Leu Phe Ser Asp Ala Arg Arg Leu	100	105	110
Leu Leu Tyr Ser Gln Lys Asp Thr Ser Met Lys Asp Met Arg Lys Val	115	120	125
Leu Arg Thr Leu Gln Gln Ile Lys Lys Ser Ser Ser Asn Leu Lys Leu	130	135	140
Gln Asp Phe Leu Val Asp Asn Glu Thr Phe Ser Gly Phe Leu Tyr His	145	150	155
Asn Leu Ser Leu Pro Lys Ser Thr Val Asp Lys Met Leu Arg Ala Asp	165	170	175
Val Ile Leu His Lys Val Phe Leu Gln Gly Tyr Gln Leu His Leu Thr	180	185	190
Ser Leu Cys Asn Gly Ser Lys Ser Glu Glu Met Ile Gln Leu Gly Asp	195	200	205
Gln Glu Val Ser Glu Leu Cys Gly Leu Pro Lys Glu Lys Leu Ala Ala	210	215	220
Ala Glu Arg Val Leu Arg Ser Asn Met Asp Ile Leu Lys Pro Ile Leu	225	230	235
Arg Thr Leu Asn Ser Thr Ser Pro Phe Pro Ser Lys Glu Leu Ala Glu	245	250	255
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Pro Tyr Cys Asn Asp Leu Met Lys Asn Leu Glu Ser Ser Pro Leu Ser		
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Arg Ile Ile Trp Lys Ala Leu Lys Pro Leu Leu Val Gly Lys Ile Leu		
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Tyr Thr Pro Asp Thr Pro Ala Thr Arg Gln Val Met Ala Glu Val Asn		
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Lys Thr Phe Gln Glu Leu Ala Val Phe His Asp Leu Glu Gly Met Trp		
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Thr Gly Thr Glu Lys Lys Thr Gly Val Tyr Met Gln Gln Met Pro Tyr				
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Pro Leu Phe Met Thr Leu Ala Trp Ile Tyr Ser Val Ala Val Ile Ile				
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Lys Gly Ile Val Tyr Glu Lys Glu Ala Arg Leu Lys Glu Thr Met Arg				
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Ile Met Gly Leu Asp Asn Ser Ile Leu Trp Phe Ser Trp Phe Ile Ser				
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Asp Gly Phe Asn Leu Thr Thr Ser Ile Ser Met Met Leu Phe Asp Thr				
	820		825	830
Phe Leu Tyr Gly Val Met Thr Trp Tyr Ile Glu Ala Val Phe Pro Gly				
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Gln Tyr Gly Ile Pro Arg Pro Trp Tyr Phe Pro Cys Thr Lys Ser Tyr				
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Trp Phe Gly Glu Glu Ser Asp Glu Lys Ser His Pro Gly Ser Asn Gln				
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Lys Val Ala Val Asp Gly Leu Ala Leu Asn Phe Tyr Glu Gly Gln Ile				
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Thr Ser Phe Leu Gly His Asn Gly Ala Gly Lys Thr Thr Thr Met Ser				
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Ile Leu Thr Gly Leu Phe Pro Pro Thr Ser Gly Thr Ala Tyr Ile Leu				
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Gly Lys Asp Ile Arg Ser Glu Met Ser Thr Ile Arg Gln Asn Leu Gly				
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Val Cys Pro Gln His Asn Val Leu Phe Asp Met Leu Thr Val Glu Glu				
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His Ile Trp Phe Tyr Ala Arg Leu Lys Gly Leu Ser Glu Lys His Val				
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Lys Ala Glu Met Glu Gln Met Ala Leu Asp Val Gly Leu Pro Ser Ser				
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Asn Leu Ile Arg Lys His Val Ser Glu Ala Arg Leu Val Glu Asp Ile			
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Gly His Glu Leu Thr Tyr Val Leu Pro Tyr Glu Ala Ala Lys Glu Gly			
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Asn Gln Ala Met Ala Asp Ala Leu Glu Arg Phe Gly Glu Asn Arg Phe		
1825	1830	1835 1840
Val Ser Pro Leu Ser Trp Asp Leu Val Gly Arg Asn Leu Phe Ala Met		
1845	1850	1855
Ala Val Glu Gly Val Val Phe Phe Leu Ile Thr Val Leu Ile Gln Tyr		
1860	1865	1870
Arg Phe Phe Ile Arg Pro Arg Pro Val Asn Ala Lys Leu Ser Pro Leu		
1875	1880	1885
Asn Asp Glu Asp Glu Asp Val Arg Arg Glu Arg Gln Arg Ile Leu Asp		
1890	1895	1900
Gly Gly Gly Gln Asn Asp Ile Leu Glu Ile Lys Glu Leu Thr Lys Ile		
1905	1910	1915 1920
Tyr Arg Arg Lys Arg Lys Pro Ala Val Asp Arg Ile Cys Val Gly Ile		
1925	1930	1935
Pro Pro Gly Glu Cys Phe Gly Leu Leu Gly Val Asn Gly Ala Gly Lys		
1940	1945	1950
Ser Ser Thr Phe Lys Met Leu Thr Gly Asp Thr Thr Val Thr Arg Gly		
1955	1960	1965
Asp Ala Phe Leu Asn Lys Asn Ser Ile Leu Ser Asn Ile His Glu Val		
1970	1975	1980
His Gln Asn Met Gly Tyr Cys Pro Gln Phe Asp Ala Ile Thr Glu Leu		
1985	1990	1995 2000
Leu Thr Gly Arg Glu His Val Glu Phe Phe Ala Leu Leu Arg Gly Val		
2005	2010	2015
Pro Glu Lys Glu Val Gly Lys Val Gly Glu Trp Ala Ile Arg Lys Leu		
2020	2025	2030
Gly Leu Val Lys Tyr Gly Glu Lys Tyr Ala Gly Asn Tyr Ser Gly Gly		
2035	2040	2045
Asn Lys Arg Lys Leu Ser Thr Ala Met Ala Leu Ile Gly Gly Pro Pro		

2050	2055	2060
Val Val Phe Leu Asp Glu Pro Thr Thr Gly Met Asp Pro Lys Ala Arg		
2065	2070	2075 2080
Arg Phe Leu Trp Asn Cys Ala Leu Ser Val Val Lys Glu Gly Arg Ser		
2085	2090	2095
Val Val Leu Thr Ser His Ser Met Glu Glu Cys Glu Ala Leu Cys Thr		
2100	2105	2110
Arg Met Ala Ile Met Val Asn Gly Arg Phe Arg Cys Leu Gly Ser Val		
2115	2120	2125
Gln His Leu Lys Asn Arg Phe Gly Asp Gly Tyr Thr Ile Val Val Arg		
2130	2135	2140
Ile Ala Gly Ser Asn Pro Asp Leu Lys Pro Val Gln Asp Phe Phe Gly		
2145	2150	2155 2160
Leu Ala Phe Pro Gly Ser Val Leu Lys Glu Lys His Arg Asn Met Leu		
2165	2170	2175
Gln Tyr Gln Leu Pro Ser Ser Leu Ser Ser Leu Ala Arg Ile Phe Ser		
2180	2185	2190
Ile Leu Ser Gln Ser Lys Lys Arg Leu His Ile Glu Asp Tyr Ser Val		
2195	2200	2205
Ser Gln Thr Thr Leu Asp Gln Val Phe Val Asn Phe Ala Lys Asp Gln		
2210	2215	2220
Ser Asp Asp Asp His Leu Lys Asp Leu Ser Leu His Lys Asn Gln Thr		
2225	2230	2235 2240
Val Val Asp Val Ala Val Leu Thr Ser Phe Leu Gln Asp Glu Lys Val		
2245	2250	2255
Lys Glu Ser Tyr Val		
2260		

<210> 11

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
amplification primer

<400> 11  
cctctcatta cacaaaaacc agac

24

<210> 12  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1  
amplification primer

<400> 12  
gctttctttc acttctcatc ctg

23

<210> 13  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1 RT-PCR  
primer

<400> 13  
tccttgagggt caggggatta tc

22

<210> 14  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1 RT-PCR  
primer

<400> 14  
caatgttttt gtggcttcgg c

21

<210> 15  
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<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1 RT-PCR  
primer

<400> 15  
agtcgagctc caaacatgtc agctgttact ggaagtggcc 40

<210> 16  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1 RT-PCR  
primer

<400> 16  
tctctggatt ctgggtctat gtcag 25

<210> 17  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1 RT-PCR  
primer

<400> 17  
gggagccttt gtggaactct ttc 23

<210> 18  
<211> 41  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1 RT-PCR  
primer

<400> 18  
actggtcgac cattgaattg cattgcattg aatagtatca g 41

<210> 19  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 19  
tttcctggtg gacaatgaa

19

<210> 20  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 20  
agtgacatgc gacaggag

18

<210> 21  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 21  
gatctggaag gcatgtgg

18

<210> 22  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 22  
ccaggcagca ttgagctg

18

<210> 23  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 23

ggcctggaca acagcata

18

<210> 24

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 24

ggacaacctg ttgagagt

19

<210> 25

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 25

aagacgacca ccatgtca

18

<210> 26

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 26

atatgggagc tgctgctg

18

<210> 27

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 27  
gggcatgagc tgacctatgt gctg

24

<210> 28  
<211> 18  
<212> DNA  
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<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 28  
aagagactgc taattgcc

18

<210> 29  
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<212> DNA  
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sequencing primer

<400> 29  
agcgacaaaa tcaagaag

18

<210> 30  
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<212> DNA  
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sequencing primer

<400> 30  
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18

<210> 31  
<211> 18  
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<213> Artificial Sequence

<220>



<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 31  
tcctccacca atctgcct

18

<210> 32  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 32  
ttcttcctca ttactgtt

18

<210> 33  
<211> 18  
<212> DNA  
<213> Artificial Sequence

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<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 33  
gatgccatca cagagctg

18

<210> 34  
<211> 17  
<212> DNA  
<213> Artificial Sequence

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<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 34  
agtgtccagc atctaaa

17

<210> 35  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 35

caaagttcac aaatactt

18

<210> 36

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

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sequencing primer

<400> 36

cttagggcac aattccaca

19

<210> 37

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 37

tgaaagttga tgattttc

18

<210> 38

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 38

tttttcacca tgtcgatga

19

<210> 39

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 39  
ctccactgat gaactgc

17

<210> 40  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 40  
gtttcttcat ttgtttga

18

<210> 41  
<211> 18  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 41  
agggcgtgtc tgggattg

18

<210> 42  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 42  
cagaatcatt tggatcag

18

<210> 43  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 43

catcagaact gctctgag

18

<210> 44

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 44

agctggcttg ttttgcttt

19

<210> 45

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 45

tggacacgcc cagcttca

18

<210> 46

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 46

cctgccatgc cacacaca

18

<210> 47

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 47

ctcatcaccc gcagaaag

18

<210> 48

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 48

cacactccat gaagcgag

18

<210> 49

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 49

tccagataat gcgggaaa

18

<210> 50

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 50

tcaggattgg cttcagga

18

<210> 51

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ABC1  
sequencing primer

<400> 51  
aagtttgagc tggatttctt g 21

<210> 52  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: beta-globin  
antisense oligonucleotide

<400> 52  
cctcttacct cagttacaat ttata 25

<210> 53  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: ABC1 antisense  
oligonucleotide

<400> 53  
catgttggtc ataggggtggg tagctc 26

<210> 54  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: beta-actin  
amplification primer

<400> 54  
tcacccacac tgtgccatct acga 24

<210> 55  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>

21

<223> Description of Artificial Sequence: beta-actin  
amplification primer

<400> 55  
cagcggaacc gtcattgcc aatgg

25

<210> 56

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: sterol  
response element oligonucleotide

<400> 56  
tcgagtgacc gatagtaacc tctcga

26

<210> 57

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: mutated sterol  
response element oligonucleotide

<400> 57  
tcgagctgca catagtaacc tctcga

26

*Sub  
B7  
cont*